

## **REMARKS**

The Examiner considered Claims 1-14, 16-19, 52, 53 and 55-95. The Applicant herein amends Claims 2, 3, 16, 18, 19, 52, 58, 62, 68-71, 73-75, 77, and 80-82. Applicant respectfully request that the Examiner reconsider Claims 1-14, 16-19, 52, 53, and 55-95 in light of the following remarks:

### **Response to Rejections under 35 U.S.C. § 112 & Claim Objections**

The Examiner rejected Claims 2, 3, 52, 53, 55-57, and 62-79 under 35 U.S.C. § 112, first paragraph. Applicants have amended Claims 2, 3, 52, 68-71, 74, 75, and 77, as suggested by the Examiner and believe that the claims comply with 35 U.S.C. § 112, first paragraph. Thus, Applicants request that the Examiner withdraw this rejection.

The Examiner further rejected Claims 2, 16-19, and 62-72 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant has amended Claims 2, 16, 18, and 19 in accordance with the Examiner's suggestions and comments. Thus, Applicants request that the Examiner withdraw this rejection.

The Examiner objected to Claims 2, 58, 62, 73, 81 and 82. Applicants have amended Claims 2, 73, and 81 to recite "phenoxy-type thermoplastic." Applicants have also amended Claims 58, 62, 73, and 82 to recite "polyhydroxyaminoether copolymer." Thus, the Applicants request that the Examiner withdraw these objections.

### **Response to Judicially Created Obviousness-Type Double Patenting**

The Examiner rejected Claims 1-4, 52, 68-71, 74, 75, and 77 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over U.S. Patent No. 6,676,883 (the '883 patent) in view of U.S Patent No. 6,489,387 to Mallya et al. ("Mallya").

The Examiner has cited Claims 31, 32, and 34-38 of the '883 Patent. Claim 31 recites:

A process for the production of coated plastic articles, comprising:

providing a polyester article having an exterior surface and an interior surface;  
and

contacting at least a portion of the exterior surface of the polyester article with a solution or dispersion of a Phenoxy-type Thermoplastic material, thereby forming a coating layer on at least a portion of the exterior surface of the article.

Applicants independent Claims 1, 2, and 52 are patentably distinguishable from the cited Claims of the '883 Patent. For example, Claims 1, 2, and 52 are limited to *aqueous* solutions of dispersions of the coating material. This claim limitation is not disclosed by any of Claims 31, 32, and 34-38 of the '883 Patent. Nor is this claim limitation disclosed in the cited portion of Mallya. Thus, Claims 31, 32, and 34-38 and Mallya fail to teach or disclose, *inter alia*, that aqueous solutions or dispersions of coating materials described in Claims 1, 2, and 52.

In addition, Applicants believe that the Claims of the '883 Patent and Mallya are not properly combinable. Neither the cited Claims of the '883 Patent nor Mallya disclose any teaching, suggestion, or incentive to combine the two references. The Examiner indicated in the Office Action that a skilled artisan would have applied a low surface energy coating to a container produced through the method of the cited Claims of the '883 Patent to produce a container that is resistant to scratching during filling and labeling. However, the Examiner has not shown that there would be any reasonable expectation of success to apply an aqueous solution of low surface energy coating such as "a polyethylene wax" to a first coating of phenoxy-type thermoplastic. A skilled artisan may expect that these coatings would have poor adhesion given their inherent polarities. Thus, the cited Claims of the '883 Patent and Mallya are not properly combinable and the Applicants respectfully request that the Examiner withdraw this rejection.

Claims 3-4, 68-71, 74, 75, and 77 depend from Claims 1, 2, and 52 and further define what is claimed in the independent Claims. Claims 3-4, 68-71, 74, 75, and 77 are patentably distinguished over the cited claims of the '883 patent and Mallya for at least the reasons set forth above with respect to Claim 1, as well as for novel and nonobvious features recited therein.

#### Combination of Maruhashi, Farha & Noda

The Examiner rejected Claims 1-7, 4-9, 11, 14, 19, 52-53, 55-79, and 81-82 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,393,106 to Maruhashi in view of U.S. Patent No. 5,472,753 to Farha and U.S. Patent No. 6,872,802 to Noda. The Examiner also rejected Claims 1-4, 52, 68-71, 74, 75 and 77 under 35 U.S.C. § 103(a) as being unpatentable over Farha, in view of Noda, and further in view of Mallya. Applicant respectfully requests that the Examiner withdraw this rejection in light of the following arguments that one or more of Maruhashi, Farha, or Noda is not properly combinable.

The Examiner has cited Maruhashi as disclosing a method of coating a polyethylene terephthalate container with an aqueous latex of thermoplastic polyvinylidene chloride comprising 20 wt% glycidyl methacrylate. The Examiner further indicates that Maruhashi teaches forming a protecting layer by melt molding a thermoplastic epoxy resin. However, the Examiner found that Maruhashi fails to teach that the coating layer comprises phenoxy-type resins as recited in Claims 1, 2, 52, 80. Thus, Maruhashi fails to teach several elements. One element that Maruhashi fails to teach aqueous solutions or dispersions of phenoxy-type materials. Furthermore, Maruhashi fails to teach that the aqueous solutions or dispersions comprising Phenoxy-type materials may be applied to an article by dip, spray or flow coating. Yet another element that Maruhashi fails to teach is that a second coating layer includes a coating material different than first phenoxy-type resin which may be applied as an aqueous solution or dispersion on the substantially dried first coating by dip, spray, or flow coating.

To remedy the deficiencies of Maruhashi, the Examiner combines Maruhashi with Farha. The Examiner found that Farha teaches a container including a layer of phenoxy-type thermoplastics. Specifically, Farha describes two embodiments of a container. The first embodiment is a three layer container having an inner layer of PET substrate, an outer layer of phenoxy-type thermoplastics, and an intermediate layer of amorphous copolyester polymer. In a second embodiment, Farha describes a two layered container having an inner substrate layer of PET substrate and an outer layer of both phenoxy-type thermoplastic and amorphous copolyester. In both embodiments, the amorphous copolyester is used to affect adhesion between the phenoxy-type thermoplastics and the PET layer. However, Farha only describes that such two or three layered containers may be made by coextrusion (col. 11, lines 18 through col. 12, line 22) or coinjection (col. 12, lines 22-37) processes.

Thus, Farha also fails to describe a method of forming a thermoplastic coating material by applying an aqueous solution or dispersion comprising a phenoxy-type thermoplastic resin. Farha further fails to describe that a second aqueous solution or dispersion comprising a different coating material than the first phenoxy-type thermoplastic resin may be used to form a second coating.

Moreover, the combination of Maruhashi and Farha is improper. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Maruhashi nor

Farha disclose any teaching, suggestion, or incentive to combine the two references. The Examiner has noted that "any polymer, including polymers of Farha, can be either dissolved or dispersed in water thereby forming an aqueous solution or dispersion of polymer." Assuming arguendo that this is true, the Examiner still has not shown the desirability for substituting the coextrusion or coinjection methods described in Farha with the aqueous coating method described in Maruhashi. Maruhashi, in fact, teaches away from its combination with Farha. Specifically, in column 6, lines 23 through 28 of Maruhashi, it states that "the copolymer that is used in the present invention is ordinarily difficult to mold by heating and melting, and therefore, the copolymer of the present invention is used for coating a plastic bottle substrate in the form of an organic solvent solution or an aqueous emulsion or latex." The coinjection or coextrusion processes used to form the articles of Farha are methods that heat and melt the polymers which form the layers of the containers. The Examiner has not indicated why a person of ordinary skill in the art would combine Maruhashi which teaches that coating by aqueous solution is not interchangeable with Farha which teaches melt molding methods such as the coinjection or coextrusion processes.

The Examiner asserts on page 7, lines 24-25 of the *Office Action* that "extrusion coating of a hot melt is functionally equivalent to roller coating, brush coating, dip coating, spray coating using aqueous solutions or emulsion" and cites Noda for this proposition. Specifically, Noda describes the process of coating articles in two sections.

First, in column 18, lines 19-25, Noda states that

Coated articles may be formed using any conventional coating technique. Coating techniques include extrusion coating, roller coating, brush coating, dip coating, spray coating, electrostatic coating, centrifugal coating and cast coating. Articles may be coated with melted PHA [polyhydroxyalkanoate copolymers], and then exposed to a coolant, such as water, by any acceptable method, such as dipping or spraying.

Second, in column 18, lines 36-45, Noda states that:

Coatings when applied must be sufficiently fluid to be spread into a uniformly thin layer across the web. Therefore, coatings are applied as solutions in organic solvents, as aqueous solutions or emulsions, as a hot melt (solid molten or softened by heat), or as a reactive liquid that solidifies by a polymerization reaction induced either thermally or by radiation. Extrusion coating is similar to hot-melt coating and is described in further detail below. . . . Coatings may be applied directly to the substrate, or may be cast to another surface, dried, and later transferred to the substrate.

Applicants believe that the Examiner has overstated the proposition described by Noda in these sections. Noda does not describe “extrusion coating” and dip, spray, and flow coating as functional equivalents. Noda simply describes that any one of these coating processes may be used to form a coating of polyhydroxyalkanoate copolymers, to which Noda is specifically directed. Noda does not broadly teach or suggest that every thermoplastic polymer material may be coated by any of the specified techniques. This is further confirmed by the teaching of Maruhashi, as referenced above, that all coating techniques are not interchangeable for other coating techniques such as extrusion.

Moreover, the Examiner has not shown any teaching, suggestion, or motivation for combining Noda with Maruhashi or Farha. Noda specifically describes methods for digesting polyhydroxyalkanoate containing articles with hot alkaline solutions. Maruhashi is directed to a laminated plastic container with a coating layer of PVC, which gives the container certain gas barrier and moisture resistance properties. Similarly, Farha describes a laminate that also provide resistance to gas permeability. As such, Maruhashi and Farha pertain to providing barrier resistance to containers. As the coating materials described in Noda relate to biodegradable polymers and not barrier materials, Applicants believe that a person having ordinary skill in the art would not combine the teachings of Noda with those of Maruhashi and Farha.

Therefore, Applicants believe that the combined teachings of the prior art, taken as a whole, do not suggest the combination of elements as described in Claims 1, 2, 52 and 80 to the person of ordinary skill in the art. Absent such a showing, the Examiner has impermissibly used hindsight by using the Applicant's teachings as a blueprint to hunt through the prior art for the claimed elements and combine them as claimed. As such, Applicants respectfully request that the Examiner withdraw the 103(a) rejections of Claims 1, 2, 52, and 80, which combine the teachings of one or more of Maruhashi, Noda, and Farha. Claims 3-14, 16-19, 53, 55-19, and 81-95 depend from Claims 1, 2, 52, and 80 and further define what is claimed in the independent Claims. Claims 3-14, 16-19, 53, 55-19, and 81-95 are patentably distinguished over the combination of one or more of Maruhashi, Farha, and Noda for at least the reasons set forth above with respect to the independent claims, as well as for novel and nonobvious features recited therein.

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**Response to Rejections of Claim 80 under 35 U.S.C. § 102(b) and/or § 103 Over Maruhashi**

The Examiner rejected Claims 80 and 83-95 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Maruhashi. Applicants have amended Claim 80 and respectfully submit that the amended claims recited features not disclosed by Maruhashi. For example, Marushashi does not teach or suggest, *inter alia*, that “the first thermoplastic epoxy resin comprises a phenoxy type thermoplastic.” The Examiner has indicated the same in paragraph 22 of the *Office Action*.

Thus, Applicants respectfully submit that Claim 80 is in condition for allowance. Claims 83-95 depend from Claim 80 and further define the invention defined in Claim 80. Claims 83-95 are thus patentably distinguished over Maruhashi for at least the reasons set forth above with respect to Claim 80, as well as for novel and nonobvious features recited therein.

**Conclusion**

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding *Office Action* are inapplicable to the present claims. Any remarks in support of patentability of one claim should not be imputed to any other claim, even if similar terminology is used. Any remarks referring to only a portion of a claim should not be understood to base patentability on solely that portion; rather, patentability must rest on each claim taken as a whole. Applicants do not concede or acquiesce to any of the rejections in the *Office Action*. Applicants have not presented arguments concerning whether many of the secondary references can be properly combined in view of the clearly missing elements noted. Applicants reserve the right to later contest whether a proper motivation and suggestion exists to combine the applied references. Accordingly, early issuance of a Notice of Allowance is most earnestly solicited.

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicants' attorney in order to resolve such issue promptly.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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